

# Enhancing Trails Compatibility with Nature

28<sup>th</sup> California Trails & Greenways Conference,  
Granlibakken Conference Center Lake Tahoe



# 28<sup>th</sup> California Trails & Greenways Conference

## ● AGENDA

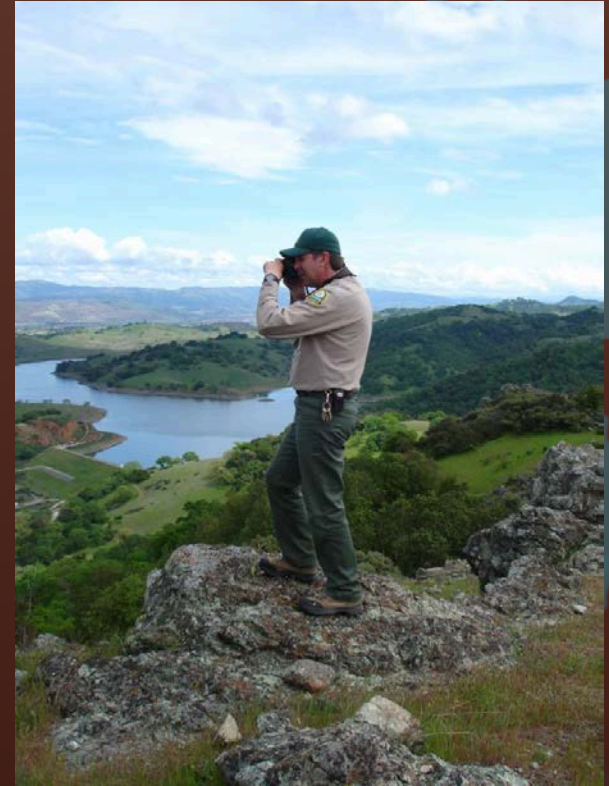
- Introduction
- Santa Clara County Park System
  - Structure of Trails Program & Natural Resource Program
- Coyote Lake-Harvey Bear Ranch County Park
  - Planning & overall construction concepts
- Layout/Design & Construction Techniques for Enhancing Trails' Compatibility with Nature
- Restoration / Obliteration / BMPs



# Introduction

## Greg Bringelson, Trail Crew Lead

- 29 years with County of Santa Clara
- West Valley College – Park Management Program
- California State Parks Trails Management Program



# Introduction

## Don Rocha, Natural Resource Program Supervisor

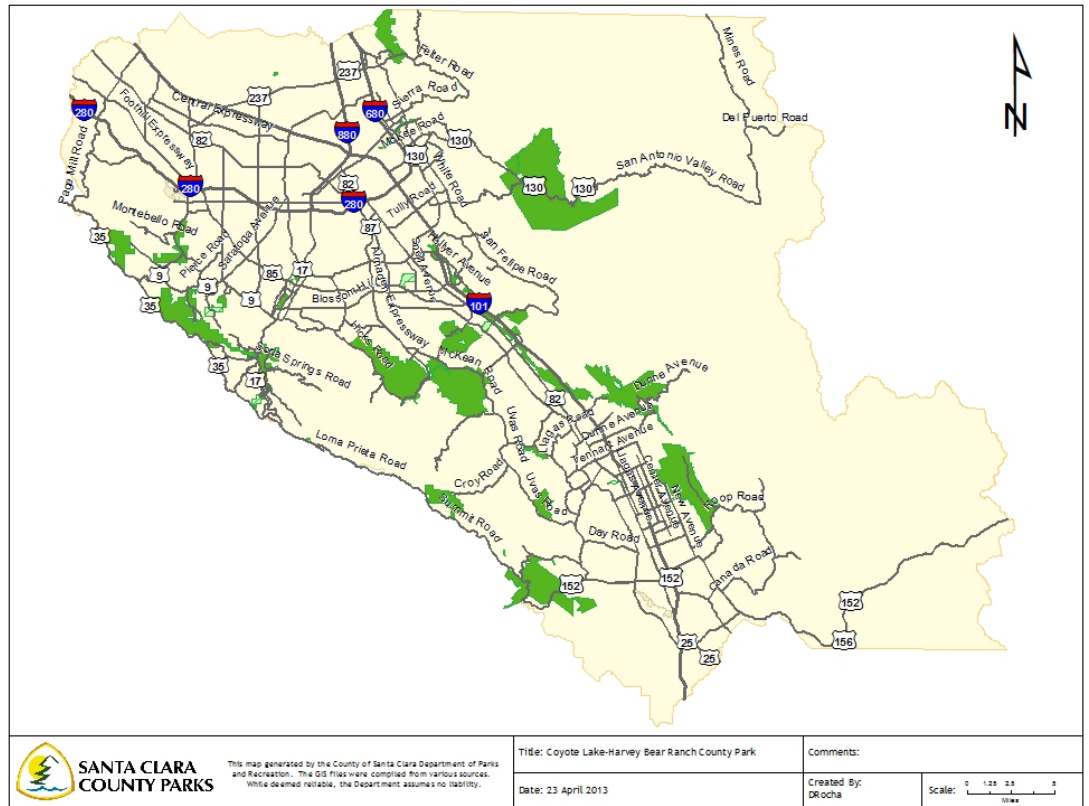
- 18 years with County of Santa Clara
- Wildlife Biologist, Humboldt State University, Wildlife Management
- West Valley College - Park Management
- California State Parks Trails Management Program





# Santa Clara County Parks

- 29 Parks
- Manage 50,000+ ac
- Over 300 miles of trails
- Web of Parks, representing all the different habitat types of the County



# Santa Clara County Parks

- Natural Resource/Trails Program
  - Department Mission is to provide, protect, and preserve Regional Parklands for the enjoyment, inspiration and education of this and future generations.
  - NRM Program Purpose/Mission is to ensure the preservation and restoration of natural systems that will provide a living legacy for this and future generations.



# Santa Clara County Parks

- Trails Program

- Goals/Objectives

- Visitor Safety/Resource Protection
- Public Access (balanced with Resource Protection)
- Sustainability/Long-term Maintenance
- Visitor / Staff Convenience



# Coyote Lake-Harvey Bear Ranch

## Model of planning for the Department

- Remained closed until planning complete and initial trails built & former trails obliterated & restored
- “clean slate”
- Comprehensive Planning (Master Plan & NRM Plan), when feasible
- Construction (Fall/Winter/Spring)
  - Fire Roads/multi-use trails





# Santa Clara County Parks

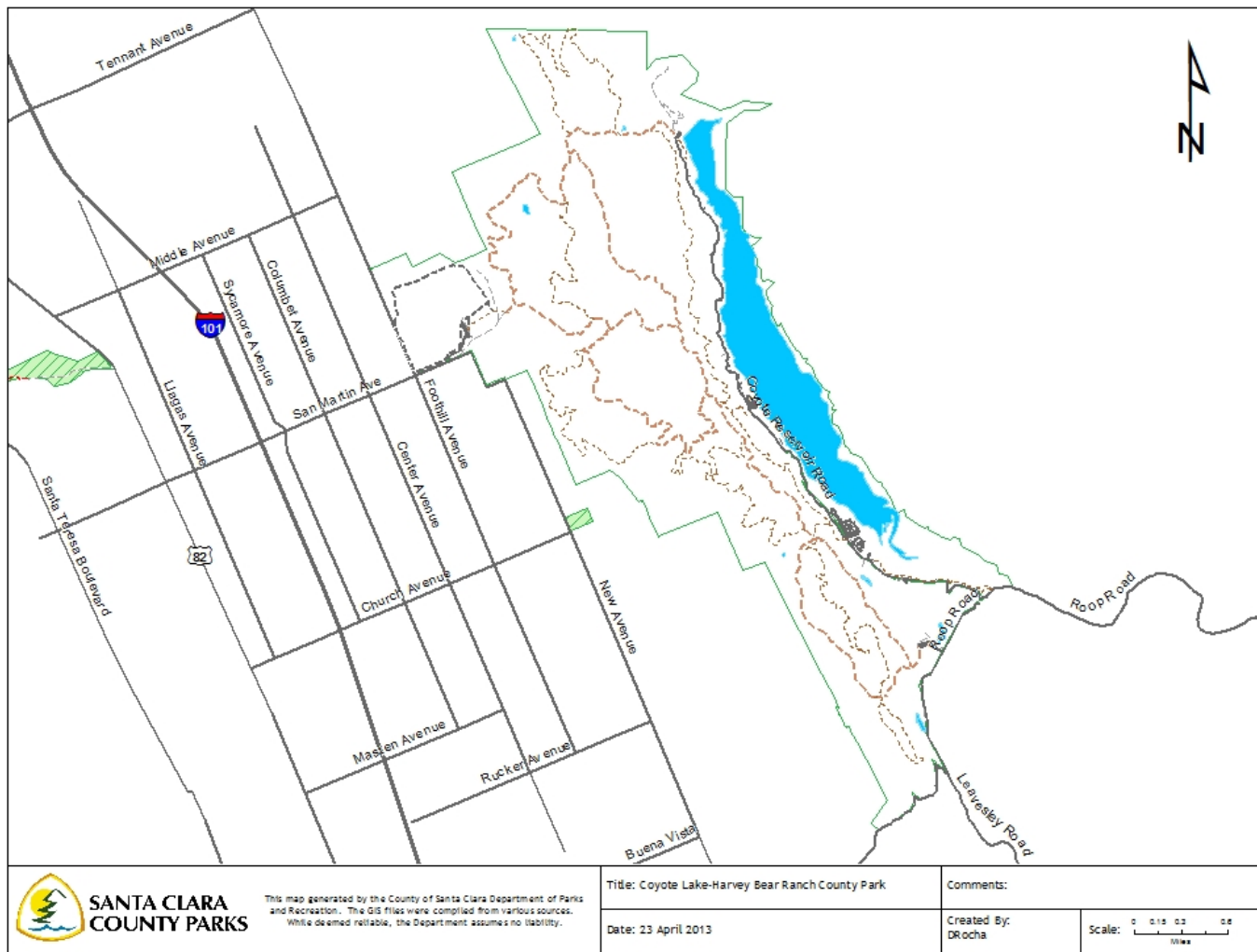
## Coyote Lake-Harvey Bear Ranch County Park Case Study

- Layout/Design 2005-6
  - Planning, grants, Environmental documents
- Single-track Construction 2006-11
  - Completion of 30+ mile trail system, final dedication October 2012
- Trail Construction funded by Recreational Trails Program grant, Coastal Conservancy, Santa Clara Valley Water District and Park Charter Funds

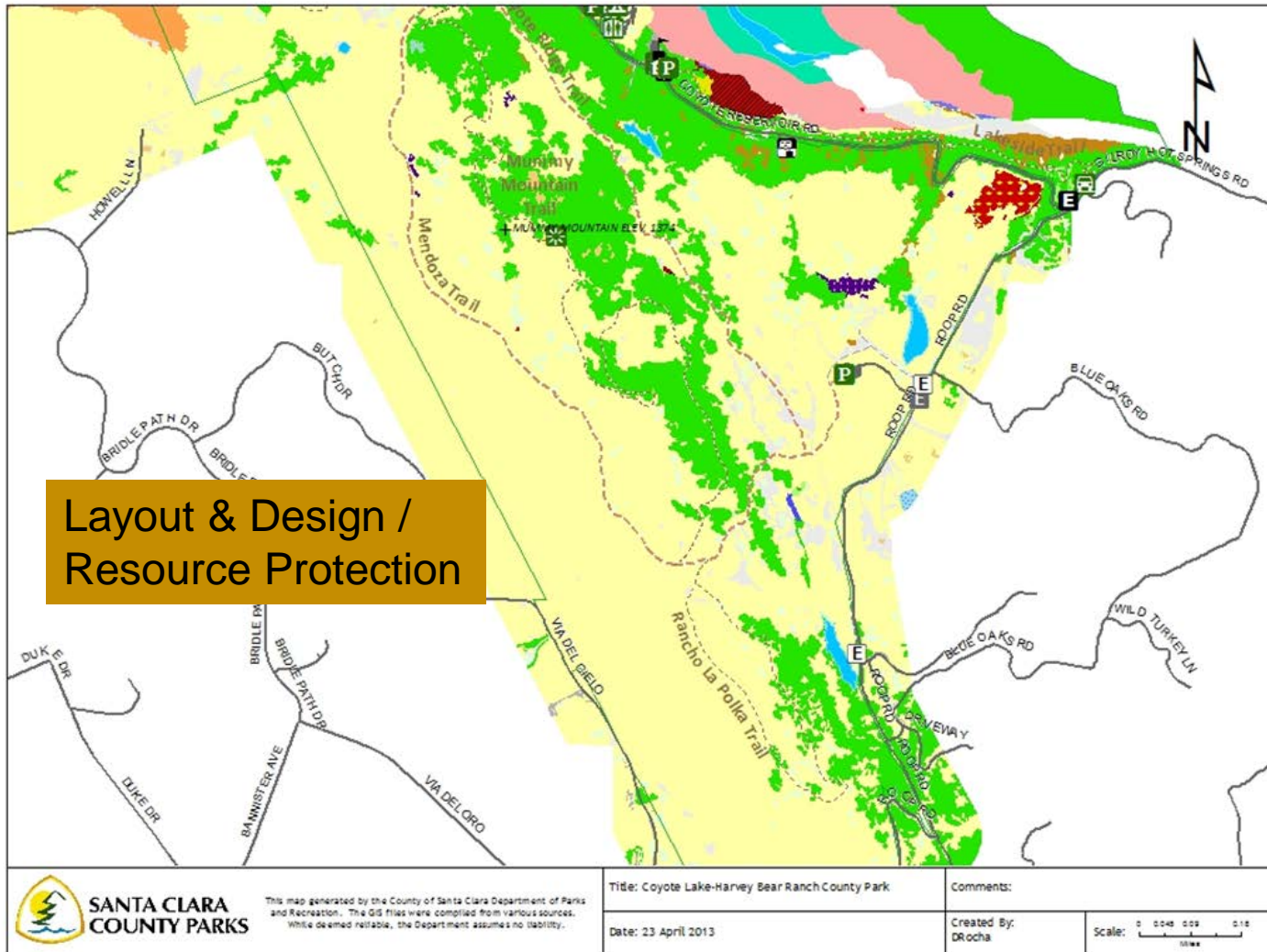




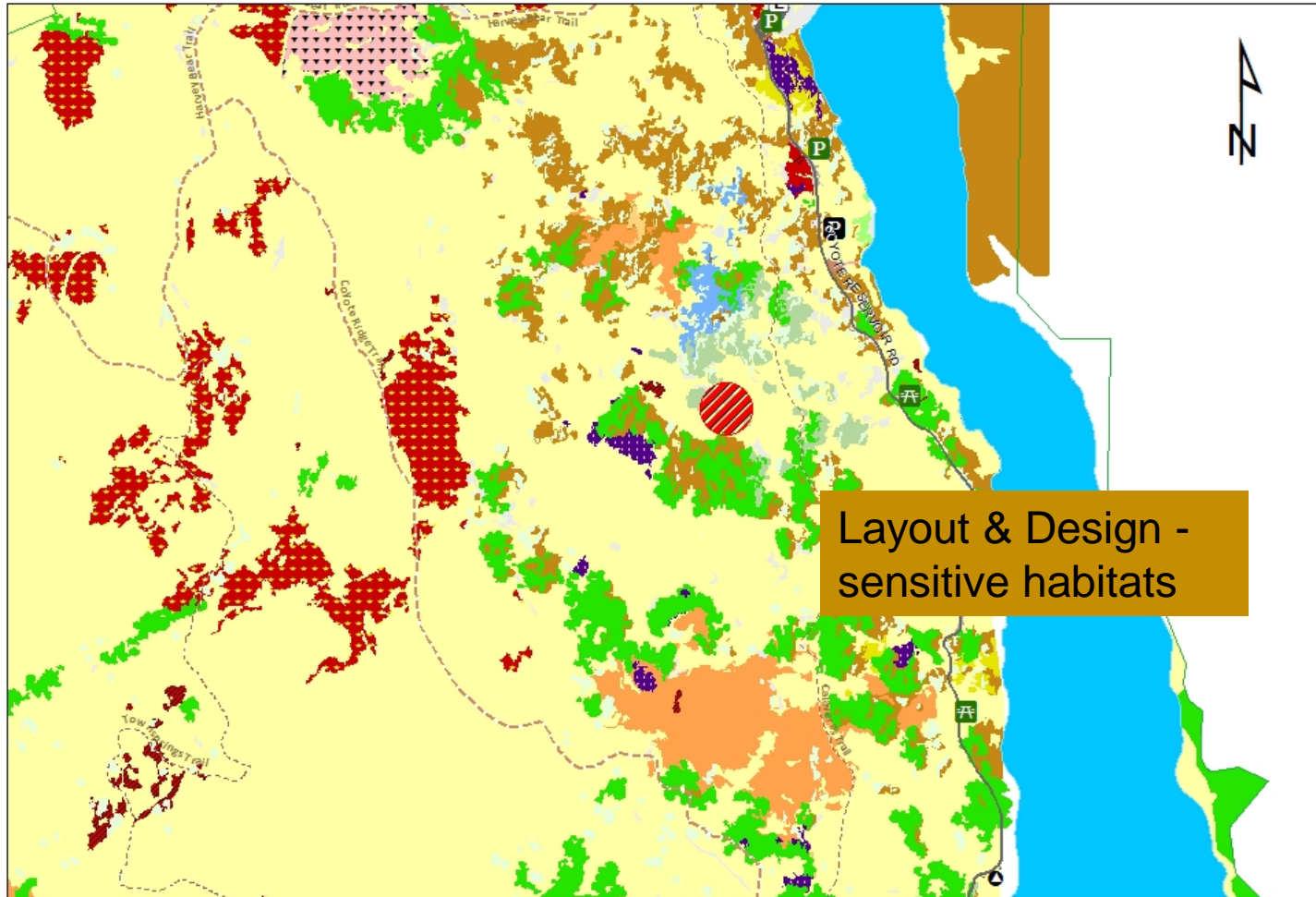
# Coyote Lake-Harvey Bear Ranch County Park



# Santa Clara County Parks



# Santa Clara County Parks



Layout & Design -  
sensitive habitats



**SANTA CLARA  
COUNTY PARKS**

This map generated by the County of Santa Clara Department of Parks and Recreation. The GIS files were compiled from various sources. While deemed reliable, the Department assumes no liability.

Title: Coyote Lake-Harvey Bear Ranch County Park

Date: 23 April 2013

Comments:

Created By:  
DROCHA

Scale: 0 0.0025 0.005 0.01  
Miles



# Layout / Design



# Santa Clara County Parks

## Layout process

- Resource Protection
- Multi-use system (prevent user conflicts for public safety and enjoyment)
- Diverse Approach / Input

## Design Concepts

- Stacked Loop system
- Unique areas (enjoyment with less impact), landscape
- Natural Contours, natural features of the landscape
- Volunteer days (education, invasive species control as part of construction)
- Site appropriate locations to minimize disturbance (short, straight creek crossings)





# Layout / Design



# Coyote Lake-Harvey Bear Ranch



## Construction Concepts

- Flow trail design / natural contours
  - Rolling / undulating trail treads
- Road Construction (earth mover)
- SWECO (inslope-outslope)
- Stream, water-crossings
- Use of Natural materials
- Site Restoration, obliteration



# Santa Clara County Parks



## Contour Concepts





# Santa Clara County Parks



## Construction Concepts in Practice



# Santa Clara County Parks



## **Best Management Practice (BMP)- trail construction**





# Santa Clara County Parks



## ● Multi-Use Trail / Fire Road Construction – Earth Movers





# Santa Clara County Parks



## Use of soils from earth mover

- Former Ranch Road Obliteration, site restoration
- “cap” poor soil trails





# Santa Clara County Parks- Resource Protection



**Minimizing side cast with in-slope  
initial cut**





# Santa Clara County Parks- Resource Protection





# Santa Clara County Parks – Natural Resource Protection



## **Natural contours and matching landscape**





# Santa Clara County Parks – Natural Resource Protection



# Santa Clara County Parks





# Santa Clara County Parks – Natural Resource Protection



## **Stream-crossing: Full Channel**





# Santa Clara County Parks





# Santa Clara County Parks

## Diaper design





# Santa Clara County Parks – Natural Resource Protection



## Tree protection





# Santa Clara County Parks – Natural Resource Protection



**Avoid root damage (“ramp”),  
3 trees removed over 30+ miles**





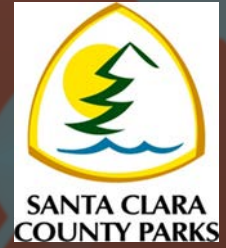
# Santa Clara County Parks – Natural Resource Protection

## Obliteration / Restoration Process





# Santa Clara County Parks – Natural Resource Protection



## **Obliteration / Restoration Process**





# Santa Clara County Parks – Natural Resource Protection



## Obliteration / Restoration Process





# Restoration/obliteration



# Restoration/obliteration



# Obliteration of ridge top and re-route to natural contours





# Santa Clara County Parks – Natural Resource Protection

## Site Restoration / Obliteration

- Seed Source
- Timing
- Restoration to natural condition
- Invasive plant control



# Santa Clara County Parks – Natural Resource Protection



## Site Restoration - Volunteers





# Santa Clara County Parks – Natural Resource Enhancements

## Use of Native Materials / Appearance Seamless Experience





# Santa Clara County Parks – Natural Resource Protection



## **BMP – Control Vectors for seed dispersal & diseases**





# Santa Clara County Parks – Natural Resource Enhancements

